

REMARKS

The Final Office Action dated July 14, 2006 has been reviewed and carefully considered. Claims 1 -21 remain pending, the only independent claims being claims 1 and 15. Claims 1 and 15 have been amended. Support for these amendments can be found in the specification at least on page 7, line 21 -- page 8, line 6. Reconsideration of the above-identified application and entry of this amendment is respectfully requested.

Claims 1-3, 5-12, 14, 15, 17, 19 and 20 stand rejected under 35 USC 102(b) as being anticipated by Graves, U.S. Patent No. 5,410,344.

Applicants respectfully submit that the pending claims, as amended, are patentable for at least the following reasons.

Claim 1 recites, as amended:

A method for providing hierarchical decision fusion of recommender scores, said method comprising the steps of :

- (a) providing a plurality of recommenders at a first level, said recommenders being grouped to at least one of a plurality of predetermined groups;
- (b) providing a predetermined number of first level fusion centers for receiving an output from each of said recommenders from at least one particular group;
- (c) outputting a decision by each one of said plurality of recommenders grouped in step (a) to a respective first level fusion center, wherein each decision provides a recommendation;

(d) each respective first level fusion center performing a first fusing step of the decisions output in step (c) by said recommenders from said at least one particular group;

(e) each respective first level fusion center outputting a first enhanced decision based on the fusion performed in step (d);

(f) providing a plurality of second level fusion centers for receiving the first enhanced decisions output from a group of said first level fusion centers, if the first enhanced decisions are not within a predefined range;

(g) each respective second level fusion center performing a second fusing step of the first enhanced decisions received from the group of said first level fusion centers;

(h) each respective second level fusion center outputting a second enhanced decision; and

(i) outputting to a user a finally enhanced decision chosen from the enhanced decisions in step (h) or (e).

Graves fails to show, teach or imply the limitations of: providing a plurality of second level fusion centers for receiving the first enhanced decisions output from a group of said first level fusion centers, *if the first enhanced decisions are not within a predefined range*; ...outputting to a user a finally enhanced decision chosen from the enhanced decisions in step (h) or (e). Grave teaches a single neuron layer 52, which presents an output from network 46, is referred to as the output layer... The layer of neurons 50, each of which receives inputs from input neurons 48, and presents an output to output neuron 52, is commonly referred to as a hidden layer (col. 8, lines 49-51).

The present invention uses a hierarchical structure that permits greater flexibility, leading to better prediction accuracy, over the prior art. The hierarchy may not need to

be utilized up to the nth level in all cases. For example, if a recommendation score is within a certain predefined range at a lower level, (for example) the second level of fusion centers, the recommendation can be made to the user without the necessity of utilizing the system resources associated with having the highest level fusion center provide the recommendation. This flexibility can be advantageous when a recommender system is making recommendations to a plurality of users during at least a partially overlapping period. See page 7, line 21 – page 8, line 6.

The Graves' invention is incompatible with such flexibility as he does not teach or suggest the use a hierarchical process as that term is defined by both the present invention and Graves himself. Accordingly applicant submits that claim 1, as amended, is patentable over Graves.

With regard to claim 5, the applicant notes that each fusion layer of his application can be performed by a variety of means ("weighted averages, voting, neural networks, and Dempster-Shaffer Evidential Reasoning, are just a few of the many fusion methods known to persons of ordinary skill in the art that can be used", paragraph 35). The Office Action refers to col. 6, lines 24-26, to show this limitation. Applicants respectfully disagree. In this section, Graves merely teaches one method of fusion, e.g. combining ... bits of information across domains (e.g. field of content header and preferences), and not that each fusion layer can be performed by a variety of means, as claimed in claim 5.

A claim is anticipated only if each and every element recited therein is expressly or inherently described in a single prior art reference. Graves cannot be said to anticipate the present invention, because Graves fails to disclose each and every element recited.

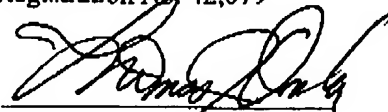
Having shown that Graves fails to disclose each and every element claimed, applicant submits that the reason for the Examiner's rejection of method claim 1 and corresponding system claim 15, as amended, have been overcome and can no longer be sustained. Applicant respectfully requests reconsideration, withdrawal of the rejection and allowance of claims 1 and 15.

With regard to claims 2-4, 6-14 and 16-21, these claims ultimately depend from one of the independent claims, which have been shown to be not anticipated and allowable in view of the cited references. Accordingly, claims 2-14 and 16-21 are also allowable by virtue of their dependence from an allowable base claim.

For all the foregoing reasons, it is respectfully submitted that all the present claims are patentable in view of the cited references. Entry of this amendment and a Notice of Allowance is respectfully requested.

Respectfully submitted,

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